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IN THE US PATENT AND TRADEMARK OFFICE

August 21, 2004

Applicants: Andreas Hajek et al.

Title : Moulding Composition For The Production
Of Sanitary-Ware Components

Serial No.: 09/664 241

Group: 1713

Filed : September 18, 2000

Examiner: Egwim

Confirmation No. 4110

Mail Stop Appeal Brief-Patents

Commissioner for Patents

P.O. Box 1450

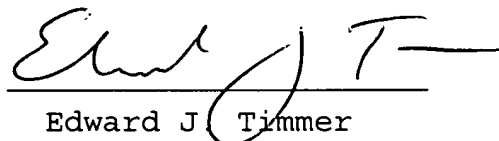
Alexandria, VA 22313-1450

CERTIFICATE OF MAILING

Dear Sir:

I hereby certify that the correspondence set forth below is being deposited with the United States Postal Service under 37 CFR 1.8 as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on August 23, 2004.

Respectfully submitted,


Edward J. Timmer

Walnut Woods Centre

5955 W. Main Street

Kalamazoo, MI 49009

correspondence - Appellant's Brief on Appeal with Appendix
in triplicate
Letter Transmitting Appeal Brief Fee
in duplicate
Check for \$330.00
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LETTER TRANSMITTING APPEAL BRIEF FEE

Dear Sir:

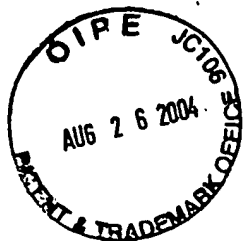
Enclosed is a check for \$330.00 for the fee for submission of the appeal brief.

The Commissioner is hereby authorized to any deficiency in the fee for filing of the enclosed Appellant's Brief on Appeal to Deposit Account No. 20-1124. In the event that an extension of time needs to be obtained to timely file the Brief on Appeal, Applicants so petition and authorize the Commissioner to charge any additional fee for a time extension to Deposit Account No. 20-1124. A duplicate of this sheet is enclosed.

Respectfully submitted,

Edward J. Timmer

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APPELLANT'S BRIEF ON APPEAL

Dear Sir:

This is an appeal from the decision of the Examiner dated
February 12, 2004, finally rejecting claims 1-13.

REAL PARTY IN INTEREST

The real party in interest is Blanco GmbH & Co. KG, the assignee of
the entire right, title and interest in the above application.

RELATED APPEALS AND INTERFERENCES

There are no appeals or interferences known to Applicant or the
undersigned which will directly affect, or be affected by or have
a bearing on the Board's decision in the appeal.

STATUS OF CLAIMS

Claims 1-13 are pending and are the claims on appeal. These claims
appear in the Appendix.

STATUS OF AMENDMENTS

A response to the final rejection was not filed.

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SUMMARY OF THE INVENTION

Applicants' invention as defined by independent claim 1 is directed to a sanitary-ware moulding composition comprising a methyl-methacrylate-based syrup and from 50 to 85% by weight, expressed in terms of the moulding composition, of an inorganic filler, wherein the moulding composition further comprises elastomer particles or elastomer particle aggregates having a particle size smaller than 100 μm in an amount in the range of 5% by weight to less than 20% by weight, expressed in terms of the mass of the syrup, effective to impart to a sanitary-ware component molded from the moulding composition improved resistance to scratching as compared to a sanitary-ware component molded from a similar moulding composition devoid of the elastomer particles or elastomer particle aggregates (see page 1, lines 1-5; page 2, 15-34 and page 8, lines 1-11).

Claim 2 depends from claim 1 and recites that the syrup comprises PMMA with a molecular weight (M_w) of from 50,000 to 250,000 in an amount of up to 20 % by weight, expressed in terms of the mass of the syrup (see page 3, lines 34-36).

Claim 3 depends from claim 1 and recites that the moulding composition contains a proportion of from 10 to 18 % by weight of the elastomer particles or elastomer particle aggregates, expressed in terms of the mass of the syrup (see page 2, lines 35-36 through page 3, lines 1-2).

Claim 4 depends from claim 1 and recites that the elastomer of the elastomer particles or elastomer particle aggregates consists of partially crosslinked polymer (see page 4, lines 3-4).

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Claim 5 depends from claim 1 and recites that the elastomer particles have a core/shell structure, wherein the core is formed by an elastomer and the shell is formed from a matrix-compatible polymer which is essentially insoluble in the syrup (see page 4, lines 5-12).

Claim 6 depends from claim 5 and recites that the shell is chemically bonded to the core elastomer (see page 4, lines 13-14).

Claim 7 depends from claim 5 and recites that the shell comprises a thermoplastic polymer (see page 4, lines 15-17).

Claim 8 depends from claim 5 and recites that the shell comprises a partially crosslinked polymer (see page 4, lines 3-4).

Claim 9 depends from claim 5 and recites that the shell is swellable in the syrup of the moulding composition (see page 4, lines 18-20).

Claim 10 depends from claim 5 and recites that the shell comprises an acrylate polymer (see page 4, lines 24-27).

Claim 11 depends from claim 5 and recites that the core consists of a partially cross-linked polysiloxane, which is grafted with an acrylate monomer to form the shell (see page 4, lines 24-27).

Claim 12 depends from claim 5 and recites that the proportion by weight of the core in the core/shell elastomer particles amounts to a proportion of from 40 to 60 % by weight (see page 4, lines 28-30).

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Claim 13 depends from claim 1 and recites that the filler content is from 60 to 80 % by weight, expressed in terms of the moulding composition (see page 4, lines 31-34).

ISSUES

FIRST ISSUE

The first issue presented for review is whether the subject matter of claims 1-7, 9, 10, 12, and 13 is obvious under 35 USC 103(a) in view of Kreig et al. EP 639539 taken with Hwa US Patent 3 661 994.

SECOND ISSUE

The second issue presented for review is whether the subject matter of claims 1-10, 12, and 13 is obvious under 35 USC 103(a) in view of Kreig et al. EP 639539 taken with Hoffmann US Patent 4 180 529 or Henton WO 88/05450.

THIRD ISSUE

The third issue presented for review is whether the subject matter of claims 1-13 is obvious under 35 USC 103(a) in view of Kreig et al. EP 639539 taken with the Alsmarraie et al. US Patent 5 087 662.

GROUPING OF THE CLAIMS

Claims 1-13 do not stand or fall together. Claim 2 is separately patentable from claim 1 in reciting that the syrup comprises PMMA with a molecular weight (M_w) of from 50,000 to 250,000 in an amount of up to 20 % by weight, expressed in terms of the mass of the syrup. Claim 3 is separately patentable in reciting that the moulding composition contains a proportion of from 10 to 18 % by weight of the elastomer particles or elastomer particle aggregates, expressed in terms of the mass of the syrup. Claim 4 is separately patentable in reciting that the elastomer of the elastomer particles or elastomer particle aggregates consists of partially crosslinked polymer. Claim 5 is separately patentable in reciting

that the elastomer particles have a core/shell structure, wherein the core is formed by an elastomer and the shell is formed from a matrix-compatible polymer which is essentially insoluble in the syrup. Claim 6 is separately patentable from claims 1 and 5 in reciting that the shell is chemically bonded to the core elastomer. Claim 7 is separately patentable in reciting that the shell comprises a thermoplastic polymer. Claim 8 is separately patentable in reciting that the shell comprises a partially crosslinked polymer. Claim 9 is separately patentable in reciting that the shell is swellable in the syrup of the moulding composition. Claim 10 is separately patentable in reciting that the shell comprises an acrylate polymer. Claim 11 is separately patentable in reciting that the core consists of a partially cross-linked polysiloxane, which is grafted with an acrylate monomer to form the shell. Claim 12 is separately patentable in reciting that the proportion by weight of the core in the core/shell elastomer particles amounts to a proportion of from 40 to 60 % by weight. Claim 13 is separately patentable from claim 1 in reciting that the filler content is from 60 to 80 % by weight, expressed in terms of the moulding composition.

ARGUMENT

FIRST ISSUE:

The rejection of claims 1-7, 9, 10, 12, and 13 as obvious under 35 USC 103(a) in view of Kreig et al. EP 639539 taken with Hwa US Patent 3 661 994 is in error.

The examiner alleges that the '539 EP document discloses 1 to 20% of a solid particulate polymer (PP) with particles ranging from 0.13 to 0.15 mm. The examiner proceeds outside the EP '539 document alleging that the EP '539 document defines the particles

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PP as being particles of the type prepared as described in Fink German DE 2135828 document. The examiner then alleges that the '828 document teaches solid particulate polymers to be elastomers. The '828 German document appears to correspond to US Patent 3 870 557.

Applicants firstly would point out that the '539 document does not disclose Applicants' claimed sanitary-ware moulding composition having in combination, 50 to 85 weight % inorganic filler particles and elastomer particles or elastomer particle aggregates having a particle size smaller than 100 μm in an amount in the range of 5% by weight to less than 20% by weight, expressed in terms of the mass of the syrup, in a methyl-methacrylate-based syrup effective to impart to a sanitary-ware component molded from the moulding composition improved resistance to scratching as compared to a sanitary-ware component molded from a similar moulding composition devoid of the elastomer particles or elastomer particle aggregates.

For example, column 5, lines 27-50 of the EP '539 document (page 11, second full paragraph of the English translation used by the examiner) expressly defines the particles PP by their chemistry or composition. In particular, the English translation states there that the particulate polymerizate PP preferably comprises "an acrylic resin, in particular PMMA or a copolymerizate of MMA...". The '539 document thus refers to acrylic resins and other polymers but does not disclose elastomer particles or elastomer particle aggregates. The '539 patent thus is grossly deficient with respect to Applicants' claims 1-7, 9, 10, 12, and 13.

The examiner's reference to the Fink DE-A2135828 document to arguably remedy the deficiencies of the '539 document with respect to the description of the particulate polymerizate PP is misplaced. For example, Applicants refer to column 5, lines 51-58 through column 6, lines 1-5 of the EP '539 document (page 12, first full

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paragraph of the English translation used by the examiner) where the particles PP are defined by their particle size feature. The '539 document indicates that polymer beads or particles PP of suitable size can be made by suspension (pearl) polymerization process as described in the Fink German DE 2135828. The '539 patent does not disclose that the particles PP have the composition of the particles of the Fink '828 document, but instead that the particles PP can be made in the suitable particle size using the suspension (pearl) polymerization process of the Fink '828 document.

Further, the Fink '828 document does not relate to a moulding composition for production of a sanitary-ware component but instead relates to soft synthetic resin particles dispersed in water for application to textile webs and other web materials (see corresponding Fink US Patent 3 870 557). The examiner's reliance on the Fink '828 document is believed misplaced and incorrect.

Moreover, the reliance on the Fink '828 document smacks of a hindsight analysis of Applicants' claims 1-7, 9, 10, 12, and 13 since the '539 document expressly teaches use of particulate polymerizate PP of acrylic resin and nowhere suggests to use a combination of elastomer particles or elastomer particle aggregates and inorganic filler in the amounts and size recited and refers to the Fink '828 document only for a teaching of how to make particles PP of suitable size.

Importantly, the examiner acknowledges that the '539 document does not explicitly disclose the inclusion of elastomer particles in the moulding composition of the document. The examiner is correct in this acknowledgement since, as mentioned above, column 5, lines 27-50 of the EP '539 document (page 11, second full paragraph of the English translation used by the examiner) expressly defines the

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particles PP by their chemistry or composition as acrylic resins, especially particles of PMMA or a copolymer of a material with acrylate.

The examiner cites the Hwa US Patent 3 661 994 to remedy this acknowledged deficiency of the '539 document. The examiner argues that the '994 patent allegedly suggests to include elastomer particles or elastomer particle aggregates in the syrup of the '539 document to improve impact strength.

Applicants believe this proposed combination of the '994 patent and the '539 document is incorrect. In particular, the '539 document itself does not teach any deficiency in impact strength of the molded article produced by practice of that patent. The examiner appears to find such a deficiency based on a hindsight analysis of Applicants' claims when no such deficiency exists within the four corners of the '539 patent. There is utterly no motivation in the '539 document to include elastomer particles or elastomer particle aggregates to improve impact strength of a molded article as alleged by the examiner based on his hindsight analysis.

Moreover, the '994 patent fails to support the combination proposed by the examiner. Firstly, the '994 patent does not teach inclusion of inorganic filler particles together with elastomer particles or elastomer particle aggregates in a sanitary-ware moulding composition. Secondly, there is no teaching in the '994 patent that the particles described in that patent can be included in any polymeric system whatsoever, much less a sanitary-ware moulding composition, without adversely affecting the properties of the moulding composition or the molded articles made from the moulding composition. For example, the '994 patent teaches that inclusion of rubber particles adversely affects other material properties such as tensile strength, clarity, heat distortion temperature, hardness, and aging stability.

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The '539 document and the '994 patent thus do not support and actually teach away from the combination proposed by the examiner in the Section 103(a) rejection. The incorrectness of the proposed combination is evidenced by the fact that the '539 document fails to provide any teaching to include particles of the type described in the '994 patent even though the '994 patent was granted in 1972 long before the filing date of the '539 document.

Moreover, column 1, lines 30-34 of the cited '994 patent argues against including rubber particles to beneficially affect properties other than impact strength such that the examiner's proposed combination conflicts with the '994 patent itself. Applicants' claimed result flies in the face of logic wherein one skilled in the art would logically think that relatively hard inorganic filler particles, rather than relatively soft elastomeric particles or elastomer particle aggregates, should be included to improve scratch resistance. Applicants claim a sanitary-ware moulding composition that is formulated to achieve improved resistance to scratching of the molded sanitary-ware component with impact strength being a consideration for reducing the wall thickness of mouldings if desired.

The examiner's proposed use of the multi-graft copolymer particles of the '994 patent in the '539 document based on a reasonable expectation of success is an incorrect basis for combining the references and violative of the *Graham v. Deere* decision, especially since the '994 patent does not relate to a sanitary-ware moulding composition and since neither the cited '539 document nor the '994 patent discloses or suggests the combination of inorganic filler and elastomer particles or elastomer particle aggregates in a methyl-methacrylate-based syrup and achievement of Applicants' unexpected and surprising results set forth in the claims.

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Applicants fail to see how there can be a reasonable expectation of improvements achieved by Applicants' sanitary-ware moulding composition when none of the cited references discloses or suggests the recited combination of inorganic filler and elastomer particles or elastomer particle aggregates in the syrup, and none of the cited references discusses how to improve resistance of a molded sanitary-ware component to scratching.

Applicants' claims recite a sanitary-ware moulding composition having particular amounts of inorganic filler and elastomer particles or elastomer particle aggregates having a particular particle size in the syrup in claims 1-7, 9, 10, 12, and 13 to achieve improved resistance to scratching not disclosed by the cited EP '539 document and '994 patent.

SECOND ISSUE:

The rejection of claims of claims 1-10, 12, and 13 as obvious under 35 USC 103(a) in view of Kreig et al. EP 639539 taken with Hoffmann US Patent 4 180 529 or Henton WO 88/05450 is in error.

The deficiencies of the Kreig EP '539 document are pointed out above. As mentioned, the '539 document does not disclose Applicants' claimed sanitary-ware moulding composition having the recited combination of constituents. The examiner appears to find a deficiency of impact strength in the '539 document based on a hindsight analysis of Applicants' claims when no such deficiency exists within the four corners of the '539 document. There is utterly no motivation in the '539 document to include elastomer particles or elastomer particle aggregates to improve impact strength of a molded article as alleged by the examiner based on his hindsight analysis.

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Moreover, the secondary '529 patent and the '450 document fail to support the combination proposed by the examiner. Firstly, the '529 patent and the '450 patent do not teach inclusion of inorganic filler particles together with elastomer particles or elastomer particle aggregates in a sanitary-ware moulding composition as recited in Applicants' claims. Secondly, there is no teaching in the '529 patent and '450 patent that the particles described therein can be included in any polymeric system whatsoever, much less a sanitary-ware moulding composition, without adversely affecting the properties of the moulding composition or the molded articles made from the moulding composition.

The examiner's proposed use of the particles of the secondary '529 patent or '450 patent in the '539 document based on a reasonable expectation of success is an incorrect basis for combining the references and violative of the *Graham v. Deere* decision, especially when none of the cited references discloses or suggests the claimed combination of inorganic filler and elastomer particles or elastomer particle aggregates in a methyl-methacrylate-based syrup. Moreover, not one of the cited references discusses how to improve resistance of a molded sanitary-ware component to scratching. Applicants fail to see how there can be a reasonable expectation of Applicants' claims when none of the cited references discloses or suggests the combination of inorganic filler and elastomer particles or elastomer particle aggregates in recited amounts and particle size in the syrup, and none of the cited references discusses a sanitary-ware moulding composition that improves resistance of a molded sanitary-ware component to scratching.

Applicants' claims recite a sanitary-ware moulding composition having particular amounts of inorganic filler and elastomer particles or elastomer particle aggregates having a particular particle size in the syrup in claims 1-10, 12, and 13 to achieve improved resistance to scratching not disclosed by the cited EP '539 document and the '529 and '450 patents.

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THIRD ISSUE:

The rejection of claims 1-13 as obvious under 35 USC 103(a) in view of Kreig et al. EP 639539 taken with the Alsmarraie et al. US Patent 5 087 662 is in error.

The deficiencies of the Kreig EP '539 document are pointed out above. As mentioned, the '539 document does not disclose Applicants' claimed sanitary-ware moulding composition having the recited combination of constituents. The examiner appears to find a deficiency of impact strength in the '539 document based on a hindsight analysis of Applicants' claims when no such deficiency exists within the four corners of the '539 document. There is utterly no motivation in the '539 document to include elastomer particles or elastomer particle aggregates to improve impact strength of a molded article as alleged by the examiner based on his hindsight analysis.

Moreover, the '662 patent fails to support the combination proposed by the examiner. Firstly, the '662 patent does not teach inclusion of inorganic filler particles together with elastomer particles or elastomer particle aggregates in a sanitary-ware moulding composition as recited in Applicants' claims. Secondly, there is no teaching in the '662 patent that the particles described therein can be included in any polymeric system whatsoever, much less a sanitary-ware moulding composition, without adversely affecting the properties of the moulding composition or the molded articles made from the moulding composition. For example, the '662 patent involves a polymer composition based on a matrix forming polymer which includes polycarbonate resins, polyester resins, and polyphenyleneether resins that are different from Applicants' claimed sanitary-ware moulding composition.

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Applicant fails to see where there is any motivation to combine the '539 document and the '662 patent as the examiner proposes when the polymer composition of the '662 patent is based on a different polymer system that is in need of improvement in impact resistance while the '539 document is devoid of any motivation or need to improve the impact resistance.

The examiner's proposed use of the core/shell particles of the '662 patent in the '539 document based on a reasonable expectation of success is an incorrect basis for combining the references and violative of the *Grahm v. Deere* decision, especially when none of the cited references discloses or suggests the claimed combination of inorganic filler and elastomer particles or elastomer particle aggregates in a methyl-methacrylate-based syrup. Moreover, not one of the cited references discusses how to improve resistance of a molded sanitary-ware component to scratching. Applicants fail to see how there can be a reasonable expectation of Applicants' claims when none of the cited references discloses or suggests the combination of inorganic filler and elastomer particles or elastomer particle aggregates in recited amounts and particle size in the syrup, and none of the cited references discusses a sanitary-ware moulding composition that improves resistance of a molded sanitary-ware component to scratching.

Applicants' claims recite a sanitary-ware moulding composition having particular amounts of inorganic filler and elastomer particles or elastomer particle aggregates having a particular particle size in the syrup in claims 1-13 to achieve improved resistance to scratching not disclosed by the cited EP '539 document and the '662 patent.

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CONCLUSION

FIRST ISSUE

It is respectfully submitted that pending claims 1-7, 9, 10, 12, and 13 are not obvious under 35 USC 103(a) in view of Kreig et al. EP 639539 taken with Hwa US Patent 3 661 994.

SECOND ISSUE

It is respectfully submitted that pending claims 1-10, 12, and 13 are not obvious under 35 USC 103(a) in view of Kreig et al. EP 639539 taken with Hoffmann US Patent 4 180 529 or Henton WO 88/05450.

THIRD ISSUE

It is respectfully submitted that pending claims 1-13 are not obvious under 35 USC 103(a) in view of Kreig et al. EP 639539 taken with the Alsmarraie US Patent 4 180 529.

Respectfully submitted,

IN TRIPLICATE

A handwritten signature in dark ink, appearing to read 'Edward J. Timmer', is written over a horizontal line.

Edward J. Timmer Reg. No. 24 702

Encl. Appendix and Postal Card

APPENDIX

1. Sanitary-ware moulding composition, comprising a methyl-methacrylate-based syrup and from 50 to 85% by weight, expressed in terms of the moulding composition, of an inorganic filler and further comprising elastomer particles or elastomer particle aggregates having a particle size smaller than 100 μm in an amount in the range of 5% by weight to less than 20% by weight, expressed in terms of the mass of the syrup, effective to impart to a sanitary-ware component molded from said moulding composition improved resistance to scratching as compared to a sanitary-ware component molded from a similar moulding composition devoid of said elastomer particles or elastomer particle aggregates.

2. Moulding composition according to Claim 1, characterized in that the syrup comprises PMMA with a molecular weight (M_w) of from 50,000 to 250,000 in an amount of up to 20 % by weight, expressed in terms of the mass of the syrup.

3. Moulding composition according to Claim 1, characterized in that it contains a proportion of from 10 to 18 % by weight of the elastomer particles or elastomer particle aggregates, expressed in terms of the mass of the syrup.

4. Moulding composition according to Claim 1, characterized in that the elastomer of the particles or aggregates consists of partially crosslinked polymer.

5. Moulding composition according to Claim 1, characterized in that the elastomer particles have a core/shell structure, the core being formed by an elastomer and the shell from a matrix-compatible polymer which is essentially insoluble in the syrup.

6. Moulding composition according to Claim 5, characterized in that the shell is chemically bonded to the core elastomer.

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7. Moulding composition according to Claim 5, characterized in that the shell comprises a thermoplastic polymer.

8. Moulding composition according to Claim 5, characterized in that the shell comprises a partially crosslinked polymer.

9. Moulding composition according to Claim 5, characterized in that the shell is swellable in the syrup of the moulding composition.

10. Moulding composition according to Claim 5, characterized in that the shell comprises an acrylate polymer.

11. Moulding composition according to Claim 5, characterized in that the core consists of a partially cross-linked polysiloxane, which is grafted with an acrylate monomer to form the shell.

12. Moulding composition according to Claim 5, characterized in that the proportion by weight of the core in the core/shell elastomer particles amounts to a proportion of from 40 to 60 % by weight.

13. Moulding composition according to Claim 1, characterized in that the filler content is from 60 to 80 % by weight, expressed in terms of the moulding composition.